

WIRELESS ACCESS SYSTEM FOR ALLOCATING AND SYNCHRONIZING  
UPLINK AND DOWNLINK OF TDD FRAMES AND METHOD OF OPERATION

## ABSTRACT OF THE DISCLOSURE

There is disclosed a TDD frame transmission synchronization  
5 apparatus for use in a fixed wireless access network comprising a  
plurality of base stations capable of bidirectional time division  
duplex (TDD) communication with wireless access devices disposed at  
a plurality of subscriber premises. The TDD frame transmission  
10 synchronization apparatus comprises a frame allocation controller  
for receiving from a first radio frequency (RF) modem shelf  
associated with a first base station access requests generated by  
a first group of wireless access devices communicating with the  
first base station and determining from traffic requirements  
associated with the access requests a time duration of a longest  
15 downlink portion of TDD frames used by a first one of a plurality  
of RF modems in the RF modem shelf to communicate with a first  
wireless access device. The frame allocation controller further  
determines a frame allocation of the downlink portion and the  
uplink portion of TDD frames used by the plurality of RF modems to  
20 communicate with the first group of wireless access devices.